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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RANDALL L. SIMPSON, RONALD S. LEE,
THOMAS M. TILLOTSON, LAWRENCE W. HRUBESH,
and ROSALIND W. SWANSIGER

Appeal 2011-008747
Application 09/481,043
Technology Center 1700

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and BEVERLY A. FRANKLIN, *Administrative Patent Judges*.

KIMLIN, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1, 26-38, 40-41, and 45. We have jurisdiction under 35 U.S.C. § 6(b).

Claim 1 is illustrative:

1. A process for producing solid energetic materials,

 said process utilizing sol-gel chemistry including the extraction of a liquid phase from a gel and incorporating at least one energetic material during at least one of a solution formation, a gelation of the solution, and the

extracting of liquid from the gel, whereby producing a solid energetic material, wherein the energetic material includes a fuel and an oxidizer.

The Examiner relies upon the following references in the rejection of the appealed claims (Ans. 2-3):

Benziger	4,481,371	Nov. 6, 1984
Sayles	4,952,341	Aug. 28, 1990

Larry L. Hench & Jon K. West, *The Sol-Gel Process*, in 90 Chemistry Reviews 1990 33-72 (American Chemical Society, Jan. 1990) (hereafter “Hench”).

A Shared Award in Aerogel Process Technology, in Science and Technology Review November/December 1995 22-25 (1995) (hereafter “Science and Technology Review”).

Applicants’ Admitted Prior Art (AAPA), Spec. 13, ll. 5-23.

Appellants’ claimed invention is directed to a process for making solid energetic materials comprising a fuel and an oxidizer that find utility as explosives and propellants.

Appealed claims 1, 26-38, 40-41, and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sayles or Benziger in view of Hench, Science and Technology Review, and the AAPA found in Appellants’ Specification. Claims 1, 32, and 45 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Science and Technology Review.

We have thoroughly reviewed the respective positions advanced by Appellants and the Examiner. In so doing, we concur with Appellants that the Examiner’s rejections are not sustainable.

We consider first the Examiner’s § 103 rejection. There is no dispute that Sayles and Benziger are directed to making solid energetic materials but

provide no teaching of using sol-gel processing to make the materials. There is also no dispute that the sol-gel processing techniques employed by Appellants were known in the art at the time of filing the present application, and that the pertinent references cited by the Examiner provide no teaching of utilizing such techniques to make solid energetic materials. It is the Examiner's position that since Sayles and Benziger teach that it was known in the explosives art to use high surface areas and porosity to improve the burn rate, it would have been obvious to use sol-gel processing to make the material since it was known that such processing produces high surface area and porosity.

The flaw in the Examiner's position is that it has not been demonstrated that there is any similarity in the type of materials used in conventional sol-gel processing and the materials used in the processes of Sayles, Benziger and Appellants. Without such nexus, the Examiner has, at best, given a reason for experimentation by one of ordinary skill in the art to explore the viability of preparing high energy materials, such as explosives, by sol-gel techniques. Such an invitation falls short of the requisite reasonable expectation of success for establishing obviousness. We note that while Science and Technology Review teaches that sol-gel techniques can be used to make materials having a variety of applications, such as electronics, optics, thermopane window inserts, solar panels, toys, insulation tiles, etc., the reference provides no suggestion that sol-gel processing can be used to make solid energetic materials.

We now turn to the Examiner's § 102 rejection. The Examiner explains that Science and Technology Review discloses a sol-gel process that uses carbon as the fuel and air in the aerogel as an oxidizer. However,

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we agree with Appellants that when the claim 1 language, “solid energetic material, wherein the energetic material includes a fuel and an oxidizer”, is read in light of the present Specification, and not in a vacuum, the rejected claims require that both the fuel and the oxidizer be a solid material.

Manifestly, air is not a solid.

In conclusion, based on the foregoing, we are constrained to reverse the Examiner’s rejections.

REVERSED

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